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SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1938.

No. 3.

THE SCHRIBER-SCHROTH COMPANY,
Petitioner,

vs.

**THE CLEVELAND TRUST COMPANY,
CHRYSLER CORPORATION,**
Respondents.

No. 4.

THE ABERDEEN MOTOR SUPPLY COMPANY,
Petitioner,

vs.

**THE CLEVELAND TRUST COMPANY,
CHRYSLER CORPORATION,**
Respondents.

No. 5.

THE F. E. ROWE SALES COMPANY,
Petitioner,

vs.

**THE CLEVELAND TRUST COMPANY,
CHRYSLER CORPORATION,**
Respondents.

PETITIONERS' BRIEF.

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September 17, 1938.

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OPINIONS OF COURTS BELOW.

The Report of the Special Master before whom the case was tried on its merits is found in pages 1092 to 1189 of the Record. The Master's Findings of Fact and Conclu-

sions of Law are found in pages 1096 to 1109 of the Record. The Memorandum Opinion of the District Court overruling Respondents' exceptions to the Report of the Special Master and adopting the Special Master's Findings of Fact and Conclusions of Law as those of the court is found at Record page 1229 and the Decree entered pursuant thereto at Record page 1230.

The Opinion of the Circuit Court of Appeals (Circuit Judges Hicks, Simons and Allen, Judge Simons writing) is reported at 92 F. (2d), page 330, and appears at pages 2381 to 2395 of the record.

JURISDICTION.

These cases are here on writs of certiorari to the Circuit Court of Appeals for the Sixth Circuit under the provisions of United States Code, Title 28, § 347. The petitions for the writs were, at first, denied, but upon rehearing were granted on May 31, 1938. The judgments of the Circuit Court of Appeals were entered on October 8, 1937 (R. 2379-80).

STATEMENT OF THE CASE.

Parties and Prior Proceedings.

Petitioners were defendants in the District Court, where they prevailed. The Circuit Court of Appeals for the Sixth Circuit reversed the District Court, in part.

Respondent, The Cleveland Trust Company, is* a banking corporation holding title (under a Trust Agreement,

*Herein referred to as "Respondent" or as the "Trust Estate," Chrysler Corporation having been but a nominal and unwilling party plaintiff below.

R. 1345) to a pool of eighty odd patents (R. 2241). The patents included in the pool were assigned to Respondent by the Packard Motor Company (R. 1321), Aluminum Company of America (R. 1322) and others. All of the patents in the pool relate to pistons of the trunk type employed in internal combustion engines, particularly in automobiles.

Licenses under the pool of patents are held solely by The Aluminum Company of America (R. 1381), Bohn Aluminum & Brass Corporation (R. 1414) and Aluminum Industries, Inc. The license to Aluminum Company is exclusive to aluminum pistons (R. 1382), with collateral and sub-licenses to Bohn Corporation and Aluminum Industries. All have agreed (R. 182) to pool all patents relating to pistons per se, now owned or hereafter acquired by them. All own shares of beneficial interest in the pool (R. 271), The Aluminum Company of America and the Bohn Company in their own names, and the Aluminum Industries through its officer and principal, H. J. Hater. All pay royalties to the pool on all aluminum pistons made by them and the proceeds are thereafter paid back to the beneficiaries.

Respondent brought three separate suits against the respective Petitioners (three Cleveland dealers in pistons made by Sterling Products Corporation of St. Louis, Missouri), alleging infringement of five different patents. The three cases all involve the same issues (including the same accused device) and were defended by the manufacturer, Sterling (R. 2384). They were consolidated for trial and for argument in the Circuit Court of Appeals. Respondent caused these cases to be referred to a Special Master for trial upon the merits (R. 43). The Master heard the testimony of witnesses, observed tests and considered the evidence which was introduced by the parties. He found (R. 1106-8) all five patents invalid, and further found that the patents, if valid, were not infringed by any

of the several accused devices. Respondent filed many exceptions to the report of the Special Master, but the District Court (R. 1229) overruled all of the exceptions and entered a decree (R. 1230) adopting the Master's Findings of Fact and Conclusions of Law as its own.

Respondent appealed to the Court of Appeals for the Sixth Circuit, with the result that two of the patents [Gulick No. 1,815,733 (R. 1284) and Maynard No. 1,655,968 (R. 1300)] were held to be valid (R. 2395), and to have been infringed by one accused device (Exhibit 1), which the Court of Appeals found as "the one of prime importance to the plaintiff" (R. 2393). As to remaining accused pistons, the Court of Appeals said "we find no infringement" (R. 2394).

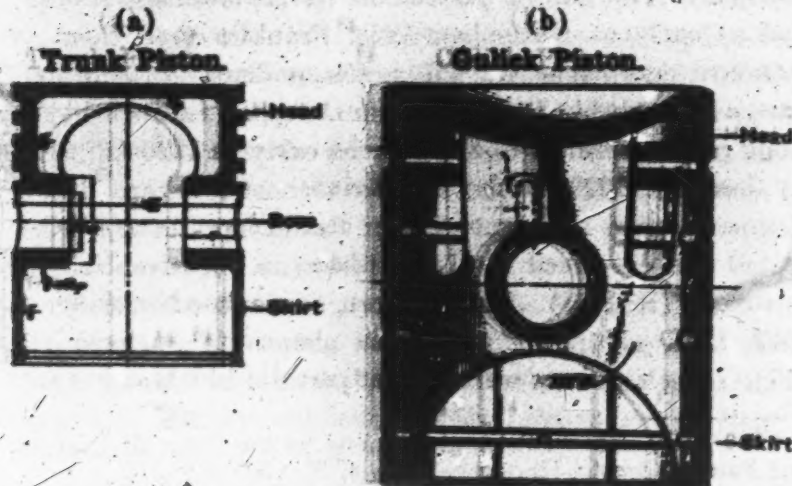
As to patents other than the Gulick and Maynard patents, the Court of Appeals stated that "little is claimed for Mooers and Schmiedeknecht . . . they apparently have no commercial history and have not substantially advanced the art" (R. 2393); and that "Jardine was without substantial commercial recognition" and that "whatever Jardine contributed to the art, if anything, is said to be incorporated in Maynard" (R. 2392). The Court of Appeals dismissed the bills "with respect to the alleged infringement of Jardine, Mooers and Schmiedeknecht, without prejudice," with the "costs of appeal will be borne by the defendants" (R. 2395).

Patents in Suit and Their History.

The patents in suit relate to pistons of what is known as the trunk type, which are used in automobile engines. In such engines the pistons become hot and expand and tend to seize or stick in the cylinder. In the prior art, beginning with Respondents' expired Spillman and Mooers (R. 1684) and Franquist (R. 1688) patents, various expedients

were resorted to in order to automatically compensate for such expansion.

The Court of Appeals apparently regarded the Gulick and Maynard patents as pertaining particularly to pistons made of aluminum, although neither of the patents makes any reference whatever to aluminum. The Court of Appeals also regarded these patents as pertaining to pistons of the "flexible web" type, and, indeed, found an essential element of each to reside in "webs laterally flexible," providing a connection between the pin bosses and the skirt of the piston, although there was no reference to this essential feature in the application for either of them, as filed. For the convenience of the Court we have reproduced (a) a drawing of the ordinary trunk piston of the type involved in these suits, and (b) a cross section of the piston of the Gulick patent showing the "web." This cross section does not contain the numerals which appear in the Gulick patent, as our present purpose is only to assist the Court in understanding what a web is. A true copy of the Gulick drawings appears in an appendix.



The importance of this feature of "webs laterally flexible," and its bearing on the question before this Court, will be further discussed in the part of this brief which is devoted to the argument of the case.

The application for Gulick patent was filed in November, 1917, but the patent did not issue until 1921. As filed in 1917, it described the piston as having webs "extremely rigid" (R. 1839). The Gulick application laid practically dormant in the Patent Office from 1917 well into 1922, and during that period of nearly five years replies were generally made to actions by the Patent Office just within the periods of one year allowed by the then existing law. No effort was made to change the description of the webs from "extremely rigid" until September 12, 1922.

During that period of nearly five years one Elmer Long had proceeded to develop his flexible web piston. Long's activities are summarized by the Master (Finding 37, R. 1102-3). Long produced his first piston in March, 1916,* and sold them as early as 1917 for replacement purposes (R. 349). Beginning April, 1920, Franklin Automobile Company sold Long's pistons in its replacement service, and as early as November, 1920, Franklin used them as standard equipment (R. 451). Respondents' witness Jeffries admitted that the Aluminum Company furnished such Long piston castings to Franklin as early as 1920 (R. 940). In January, 1920, Gann, an engineer of Packard Motor Company, then the owner of the Gulick application, illustrated and described the Long piston in "Automotive Industries" (R. 1668). Furthermore, soon after November 1, 1919, Long shipped some of his pistons to Packard (R. 387). Long's pistons were also advertised in "Motor Age".

*This early date was also given Long by the Court of Customs and Patent Appeals; *Hartog v. Long*, 47 F. (2d) 369, 370.

of July 7, 1921 (R. 1621), and in "Motor World" of December 28, 1921 (R. 2271).

The Long pistons were the only aluminum pistons on the market before 1922 which compensated for expansion, and Respondents' witness Jeffries admitted this (R. 986). They were not only manufactured and sold by Long, but also by Weems, who later supplied the replacement trade (R. 374). They were sold and used by Franklin Automobile Company until 1926, when the Long piston was replaced by the strut piston, Exhibit AAA* (Jeffries, R. 1008), which is not the Gulick or the Maynard piston, neither of which was used by Franklin (Jeffries, R. 1011). Long was sued by the Trust in 1923 (R. 2261), and that suit was finally settled when Long ceased to make even piston castings and purchased the castings from the licensees under the pool (R. 290).

There is no question but that the Long piston sold to Franklin from 1920 to 1926, and even those sold to the replacement trade by Long and Weems from 1917 on, had the "webs laterally flexible," for Jeffries admitted that very thing (R. 938-9, 1006, 1009-10). There is, furthermore, no question but that these pistons had split skirts, as well as separation of the skirt from the head. A number of Long pistons are in evidence (Exs. E, F, G and FFF), as are also the advertisements of Weems and Long; these pistons were, therefore, in physical existence in the channels of trade from 1917 to 1926. A cut of the Long piston is in the Appendix.

In 1922 there were pending in the Patent Office several applications disclosing the "flexible web" type of piston. An interference involving such a piston was declared between a Hartog application (filed February 16, 1920, R.

*See definition of this piston, called "controlled type" (R. 1415).

1798) and a Pomeroy application, the latter owned by Aluminum Company of America. This terminated adversely to Aluminum Company of America on August 10, 1922 (R. 2279). Immediately thereafter steps were taken by Packard Motor Company and Respondent, probably with the aid and assistance of Aluminum Company of America, to monopolize the aluminum piston field. Aluminum Company was then the owner of broad patents covering processes and molds for producing chill cast aluminum alloy pistons and even covering the piston castings per se.*

On September 11, 1922, Packard Motor Company assigned the Gulick application to the pool (R. 1321), and on the next day (nearly five years after it was filed and over five years after the Long piston appeared on the market, and over two years and six months after Hartog had filed), the Gulick application was amended by changing the description from "extremely rigid" to "longitudinally rigid" and, for the first time, adding a suggestion that:

"the web structure has sufficient lateral flexibility to permit the split to close more or less under the action of the expanding forces incident to the heating of the piston" (R. 1867).

In that amendment, the claim which had been involved in the Hartog-Pomeroy interference, identified as such, was

*See Aluminum Company of America v. Sterling Products Co., 66 F. (2d) 958, C. C. A. 8, which enumerates and discusses the scope of these patents. The Master referred to this case (R. 1141). Likewise did Respondents' witness Jeffries (R. 90, 91), who also described the procedure (R. 104-5), and indeed states that the advent of the aluminum piston began with that procedure (R. 95, 100), and indeed is what made it successful (R. 144).

inserted in the Gulick application (R. 1872), with a statement that:

"This interference has recently been brought to applicant's attention" (R. 1875).

Thereupon interferences were declared in the Patent Office between the Gulick application and the applications of Hartog, Long and others. Hartog and Long immediately questioned the right of Gulick to make the radical amendment. On April 4, 1934, a tribunal of the Patent Office (R. 1548-50) sustained* Gulick's right to make the amendment.

The Patent Pool and Its Effect.

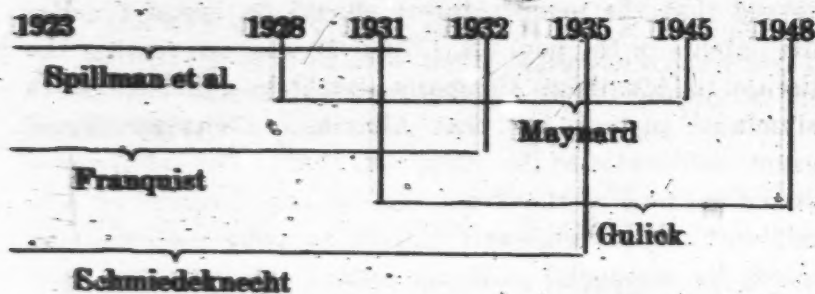
On April 11, 1934, the Trust Estate executed agreements with four piston manufacturers, namely, Aluminum Company of America (R. 1381-93), National Piston Company (R. 1403), Walker M. Levett Co. (R. 1397), and Kant-Skore Piston Company (R. 1408), wherein the manufacturers agreed to assign to the Trust Estate all their piston per se patents, then or thereafter owned, and the Trust agreed that the manufacturers should be licensed under the patents in the pool (R. 1379). It was agreed that the license to Aluminum Company should be exclusive as to aluminum pistons, but that Aluminum Company should grant sublicenses to the others (R. 1382). The sublicensees under the pool of the Trust also became licensees of Aluminum Company under its patents covering processes and molds for producing chill-cast pistons and the piston castings per se (R. 209). On September 19, 1927, Aluminum Company and the principal sublicensee (Bohn Company)

*Subsequently affirmed by the Court of Appeals, D. C., 17 F. (2d) 686, and followed by the Court of Customs and Patent Appeals, 47 F. (2d) 365, 366, 367.

both recognized that a radically different piston, namely, the steel strut piston (Exhibit AAA), came under the patents of the pool (R. 1428 and 1424).

Pistons of the type shown in Exhibit 1, found by the Court of Appeals to be that of the Maynard patent, appeared about 1923 (R. 69). In 1924, therefore, the important piston manufacturers in this country pooled their interests with the obvious intention to extend the monopoly of that particular piston. This was done by bringing the then diversely owned broad Spillman & Mooers patent, No. 1,092,870 (R. 1684), and Franquist patent No. 1,153,902 (R. 1688), together with the then pending Gulick application, into the pool. Subsequently Respondent acquired through Aluminum Company (R. 1322) a one-half interest in the Maynard patent. The Schmiedeknecht patent, No. 1,256,265 (R. 1306), was also acquired from an incoming sub-licensee (Bohn Corporation; R. 1323).

The decision of the Circuit Court of Appeals in this case effectually extended that monopoly from 1923 to 1948. It was done as shown in the following diagram:



Before they expired Respondent represented that the pioneer Spillman & Mooers and Franquist patents were responsible for the success of the aluminum piston (R. 1120-1123, 2299). Licenses were issued (R. 1381, 1408, 1414),

royalties collected (R. 102, 2299), suits brought (R. 101, 2299), judgments recovered (R. 1341), relying upon those patents as dominating flexible aluminum pistons, and they were generally acquiesced in. But upon the trial of these cases, after those patents had expired, they were renounced by Respondent and denounced (R. 99-100, 107, 109, 177, 247) by Respondent's expert as inflexible and unsuited for aluminum construction; indeed that the Franquist piston was "probably worse than a trunk piston" (R. 247) and "just plain no good" (R. 1043). Although the Schmiedeknecht patent was included in these causes (filed in 1931) as covering Exhibit 1 (R. 101), the Court of Appeals said: "Little is claimed for * * * Schmiedeknecht" (R. 2393). That was after its expiration.

The Decisions of the Master and the District Court.

The Master held the Gulick patent invalid in toto because of the attempt to broaden the original application as against intervening rights and because of material changes in the specification and claims after filing (Fact finding 15, R. 1107), relying upon this Court's decisions in Powers-Kennedy Corporation v. Concrete M. & C. Co., 282 U. S. 175 (R. 1146) and Permutit Co. v. Graver Corp., 284 U. S. 52 (R. 1151). The Master and the District Court took due notice (R. 1150, 1229) of the fact that the Patent Office tribunals, as well as the Court of Appeals of the District of Columbia and the Court of Customs and Patent Appeals, had held that Gulick was within his rights in making the before-mentioned radical change in his application. The Master explained his refusal to follow those decisions on the ground that this Court's subsequent decision in Permutit v. Graver, 284 U. S. 52, had removed the legal basis for them; furthermore, that the factual basis upon which

those previous decisions had been predicated, namely, inherent flexibility of a structure shown in the drawings, could not be relied on (R. 1152). Indeed that factual basis was, in this case, admitted* by Respondent's expert witness to have been erroneous. The Master held in effect that his overcame the presumption of validity to which the Gulick patent was normally entitled. The District Court was urged, but declined, to overrule the Master's Report upon the basis of this Court's then recent decision in *Radio Corporation of America v. Radio Laboratories*, 293 U. S. 1.

The Master found that none of the structures of the patents in suit, including the Gulick and Maynard patents, had gone into commercial use (R. 1182). He found specially that Exhibit 1 (the only one of the accused devices which the Circuit Court of Appeals held to infringe any of the patents in suit), did not have flexible webs (Findings 48 and 50, R. 1105), and that it employed the essential structure function and mode of operation of the Franquist patent (Finding 51, R. 1105). He further found that the piston even as illustrated in the Maynard patent never went into commercial use (R. 1162-3).

In Exhibit 1, the piston is reduced in diameter in the regions of the wrist pin bosses to "relieve" the piston in those regions, and this relief extends beyond the ends of the so-called webs into the bearing faces to provide relieved areas in the form of "keystones," and therefore

*That inherent flexibility of any given structure to produce that result cannot be relied upon (R. 229, 156); that lateral flexibility is established not merely by the presence of a vertical split, but because of the design of the webs to produce flexibility (R. 229); that there must be a correct proportioning of the different parts as related to location and thickness in order to produce the desired result (R. 229); the whole thing has to be designed with the object of gaining the mode of operation and results contemplated (R. 149).

called "Keystone reliefs." The Master found that in Exhibit 1 automatic compensation was accomplished by the "Keystone relief" and not by any web flexibility at the top because of the termination of the circumferential slotting at about the inside of the head flange (Finding 48, R. 1105). Further, that without the Keystone relief the piston of the Maynard patent was completely answered by the Franquist patent piston (R. 1163 and Finding 21, R. 1099), and was nothing but the piston of the Schmiedeknecht patent with the T-slot of the Long piston (R. 1163). A drawing of Exhibit 1 is shown in an appendix. On this drawing the "Keystone relief" is designated.

The Master witnessed the performance of tests with Exhibit 1 (R. 125), as well as with a piston of the Franquist patent (R. 1122 and 1041-2). The Master's findings were adopted by the District Court.

The Decision of the Court of Appeals:

The Circuit Court of Appeals followed the decisions of the Patent Office Tribunals and of the administrative courts, in the interferences involving the Gulick application, without regard to the two very cogent reasons assigned by the Master for his refusal so to do. The Circuit Court of Appeals did not, as the Master and the District Court had done, regard the abolition (by *Permutit v. Graver*, 284 U. S. 52) of the legal basis for the administrative decisions, or the admission (above mentioned) in this record, of the incorrectness of the factual basis therefor, as sufficient to overcome any strong presumption of validity.

The Court of Appeals in describing (R. 2386) the combination contemplated by the Gulick patent, which it held patentable, included "webs laterally flexible"; and likewise, in describing (R. 2392) the combination of the Mayn-

ard patent, which it held patentable, the Court of Appeals included "flexible webs." The Maynard patent does not state whether the webs are flexible or rigid. The Gulick patent, as issued, says that the webs are flexible, but the application therefor, as filed, described the structure as "extremely rigid."

The Circuit Court of Appeals, therefore, as to each patent, found an essential element of the patented combination something not described in the patent applications, as filed, and as to the Maynard patent not described in the patent as issued.

It is clear from a reading of the decision of the Court of Appeals that the Court was moved to hold the Gulick and Maynard patents valid because of assumed "commercial success." The Master found that no pistons of either of the Gulick or Maynard patents ever went into commercial use. While the Court of Appeals states that the "precise form" of the Maynard patent was sold and used to the extent of many thousands (R. 2393), the Master's report specifically shows that the evidence is the opposite (R. 1162-3). The only evidence adduced to prove commercial success was the payment of royalties under the eighty odd patents in the pool. That was not contradicted, but by cross-examination of Respondent's witnesses it was shown that the success of the aluminum piston was ascribable to other things than the patents in suit, namely, the advent of the permanent molding of aluminum pistons in 1915 (R. 144)*.

From that evidence the Circuit Court of Appeals inferred (R. 2387) that the Gulick and Maynard patents had made the aluminum piston a success.

*The Franquist patent, as found by the Master (R. 1119), first disclosed the fundamentals of a successful piston and under that patent the Trust has collected royalties (R. 102), brought suits and restrained infringements (R. 1341).

SPECIFICATION OF ERRORS ASSIGNED AND TO BE URGED.

1. That the Circuit Court of Appeals for the Sixth Circuit erred in finding, and holding patentable, a combination including one element not described in the original applications for the Gulick and Maynard patents in suit, and in refusing to follow this Court's decisions in *Permutit v. Graver*, 284 U. S. 52, and *Powers-Kennedy Corp. v. Concrete M. & C. Co.*, 282 U. S. 175, as interpreted by other Circuit Courts of Appeal.

2. That the Circuit Court of Appeals erred in accepting proof of payment of royalties under a pool of eighty patents as proof of "commercial success" of the Maynard and Gulick patents, and in rejecting the contrary finding of the Master who heard and saw the witnesses.

3. That the Circuit Court of Appeals erred in holding that the presumption of validity of a patent, however strong, is not overcome when it is shown that the legal basis for an administrative adjudication leading to its issuance had been declared wrong by a subsequent decision of this Court, or when it is admitted that the factual basis for that adjudication was wrong.

4. That the Circuit Court of Appeals erred in reversing and in not affirming the judgment of the District Court holding the patents in suit invalid, and, even if valid, not infringed, and in awarding costs to plaintiff-respondent.

SUMMARY OF ARGUMENT.

A summary of petitioner's argument appears in the captions of the four points which are set forth in the "Argument." It is not thought feasible to expand the summary beyond these captions without unduly lengthening this brief and resorting to very considerable repetition.

ARGUMENT.

We assume that this Court will not consider any questions other than those upon which the petition for certiorari was based. Consequently, we shall not, in this brief, discuss the question of infringement, although it was petitioner's contention before the courts below and it is still insisting that its piston, Exhibit 1, infringes neither the Gulick nor the Maynard patents, even if the latter are valid. Petitioner moreover still insists that these patents are invalid over the prior art as concluded by the Master and the District Court.

Point I.

THE CIRCUIT COURT OF APPEALS TREATED "WEBS Laterally Flexible" AS ESSENTIAL ELEMENTS OF THE GULICK PATENT AND HELD (a) THE PATENT VALID NOTWITHSTANDING THAT SUCH ELEMENTS WERE ADDED TO THE SPECIFICATIONS BY AMENDMENT NEARLY FIVE YEARS AFTER THE APPLICATION WAS FILED AND MORE THAN FIVE YEARS AFTER PISTONS EMPLOYING SUCH WEBS WERE IN COMMERCIAL USE BY OTHERS, (b) ALTHOUGH THE SPECIFICATION AS ORIGINALLY FILED DESCRIBED THOSE WEBS AS "EXTREMELY RIGID." THE COURT OF APPEALS APPROVED THE CHANGE SOLELY ON THE BASIS OF PATENT OFFICE AND ADMINISTRATIVE COURT DECISIONS WHICH IN TURN JUSTIFIED THE CHANGE ON AN INTERPRETATION OF THE DRAWING. THE DECISION OF THE CIRCUIT COURT OF APPEALS IS, THEREFORE, IN CONFLICT, RESPECTIVELY, WITH POWERS-KENNEDY V. CON-

CRETE CO., 282 U. S. 175, AND PERMUTIT CO. V.
GRAVER CORP., 284 U. S. 52.

The Gulick Application as Filed, and as Amended:

In the Appendix appears a composite of the specification of the Gulick application as filed and of the patent as issued, with the matter canceled by amendment indicated by crossing out, and with the matter added by amendment in black-face type. From this it will be apparent that the change in the specification was so bold that it is difficult to understand why the Patent Office should have permitted such amendments. We will, however, limit ourselves to the consideration of a feature found by the Court of Appeals to be an essential element of the patented combination, but which was not described in the application as filed, although it now appears in the patent, and as to which the original specification described the very opposite.

The original specification described and the drawing (see Appendix) delineated a piston comprising a head 10 having parts 20 depending therefrom, and in which are mounted the "bosses" 16 receiving the piston pin, which in turn receives the connecting rod. Flanges 17 are formed on the bosses and extend laterally in the form of "webs" 18 which connect with the skirt 11. The head and skirt are separated by a circumferential "slit" 12, and the skirt is "split" vertically at 21 between the webs.

The original specification as filed describes the nature and characteristics of the structure as follows:

"It will be seen that in addition to providing a piston with a split skirt, the above described construction also provides an extremely rigid connection between the piston pin bosses and the skirt of the pis-

ton, which construction may be used either with or without the split skirt and separated head. The arrangement of the supporting flanges 17 between the ends of the piston pin bosses and the connections of those flanges with the piston skirt provide a particularly **strong support** for the bosses" (R. p. 1839).*

The above description disclosed without question a construction which is not only rigid, but indeed "**extremely rigid**," as distinguished from "**flexible**." This extreme rigidity is not simply described as being in the piston structure as a whole, but as being specifically in the structure of the webs 18 of the flanges 17, which is the only "**construction**" which, as described,

"provides an extremely rigid connection between the piston pin bosses and the skirt of the piston"

and which flanges with their webs.

"provide a particularly strong support for the bosses."

That description was **not negatived**, but indeed supported, by the drawing. The parts 20 depending from the head to the bosses are of cross formation—a very rigid structure. The webs 18 of the flanges 17 leading from the bosses to the skirt appear in the form of chords subtending arcs of a circle—a well-known rigid structure preventing flexure of either the chord or of the arc. The skirt appears even provided with corrugations and with an inturned flange at the bottom—also well-known expedients for imparting rigidity to cylindrical structures, such as cans, drums, buckets, etc.

In short, the specification as filed described a construction which was not only rigid, but "**extremely rigid**," and

*Where emphasis appears in quotations, it will be understood that it is supplied unless otherwise noted.

that in the very particular parts which are in issue here, namely, the webs 18 of the flanges 17; and the drawings do not negative but rather support such extremely rigid aspect.

As shown in the Statement of the Case, the Gulick application remained in the condition with the description specifying that, the webs provide "an extremely rigid connection between the piston pin bosses and the skirt of the piston," until September 12, 1922, over five years after Long pistons having "webs laterally flexible," were on the market and in public use and on sale, and Gulick's assignee had known of Long's commercial piston since 1919. On September 12, 1922, the specification was amended and altered (see Appendix) as follows:

The webs, originally described as providing "an extremely rigid connection between the piston pin bosses and the skirt" and "a particularly strong support for the bosses," were now described as having "lateral flexibility." The description was further dressed up to change "extremely rigid" to "longitudinally rigid" and to change "support for the bosses" to "construction."

A mere comparison of the original and amended descriptions (see Appendix) will show that the difference between the descriptions of the web structure in the application as filed November 30, 1917, and as amended September 12, 1922, is the difference between "extremely rigid" and "lateral flexibility," which descriptions are as antithetical as black is from white.

The Court of Appeals Treated "Webs Laterally Flexible" as Essential Elements of the Gulick Patent.

The question of whether the original application described the web structure as being "extremely rigid" or

having "lateral flexibility" is not a collateral matter, because that forms indeed the very basis of the decision of the Court of Appeals in holding the Gulick patent valid. The Court of Appeals, after enumerating the "elements" of the "combination" of the Gulick patent, stated:

"The wrist pin bosses are pulled inwardly from the skirt periphery, and instead of being supported by the skirt are carried from the piston head by depending flanges, thus providing a vertically rigid support for the bosses with freedom of lateral motion in a direction at right angles to the load thrusts on the piston" (R. 2385).

The Court found in the Franquist patent "the broad concept of a flexible skirt" (R. 2386), and found old even "splitting the piston skirt vertically or combining the vertical and longitudinal splits into the so-called T-slot." However, the Court of Appeals did not find in the prior art a combination, including the

"connection of such bosses to the skirt with webs laterally flexible" (R. 2386).

Finally, the Maynard patent was stated to embody "the Gulick combination," including

"flexible webs in the region of the wrist pin bosses" (R. 2392).

The Court of Appeals, therefore, found the characteristic feature and essential elements of the Gulick patented combination to be "webs laterally flexible."

This decision of the Court of Appeals accepted the contention of Respondent as to the essential structure and mode of operation of the piston disclosed in the Gulick

patent. This will appear from the following extracts from the testimony of Respondents' expert Dr. Jeffries:

"the yielding characteristics of the web and skirt" (R. 74).

"Q. I am trying to get the pressure on the web. These webs do nothing but carry the skirt; isn't that right; these webs 17 and 18?

A. Oh, they carry the skirt and they carry the wrist pin and they flex; they have quite a number of functions" (R. 148).

"The Gulick webs, however, are flexible in the other lateral direction, which flexibility permits the opening and closing of a vertical slot in the skirt of the Gulick piston. These webs in the Gulick construction are designed to produce such flexibility" (R. 196).

"The Gulick flexibility is gained by flexible webs and flexible skirt and co-operation between horizontal and vertical slots permitting the flexing of the skirt. This may be referred to as the cantilever principle" (R. 203).

The Change in the Gulick Application Was Not Permissible Under Powers-Kennedy Co. v. Concrete Co.

The Master discussed the decisions of this Court (R. 1144-46) and came to the conclusion that the change in the Gulick application was not permissible under the decision of this Court in Powers-Kennedy Co. v. Concrete Co., 282 U. S. 175. The District Court affirmed that conclusion. The Court of Appeals apparently did not consider the Powers-Kennedy Case, but simply agreed with (R. 2391) the conclusions of the Patent Office and of the administrative courts in the interferences in which the Gulick application was involved. But the decision of the Court of Appeals of the District of Columbia (17 F. [2d] 686) was prior to the decision of this Court in the Powers-Kennedy

case. While the decision of the Court of Customs and Patent Appeals (47 F. [2d] 366) was shortly after the Powers-Kennedy decision, not only did that Court rely upon the decision of the Court of Appeals of the District of Columbia, but it apparently did not consider the Powers-Kennedy case at all.

There can be no doubt that the equitable doctrine announced by this Court in 1878 in *Railway Company v. Sayles*, 97 U. S. 554, 563, and adhered to in later decisions, particularly in 1930 in *Powers-Kennedy Co. v. Concrete Co.*, applies here with such force as to destroy the Gulick patent.

In *Railway Company v. Sayles* this Court says, 97 U. S. l. c. 563-4:

"It will be observed that we have given particular attention to the original application, drawings, and models filed in the Patent Office by Thompson and Bachelder. We have deemed it proper to do this, because, if the amended application and model, filed by Tanner five years later, embodied any material addition to or variance from the original—anything new that was not comprised in that—such addition or variance cannot be sustained on the original application. The law does not permit such enlargements of an original specification, which would interfere with other inventors who have entered the field in the meantime, any more than it does in the case of reissues of patents previously granted. Courts should regard with jealousy and disfavor any attempts to enlarge the scope of an application once filed, or of a patent once granted, the effect of which would be to enable the patentee to appropriate other inventions made prior to such alteration, or to appropriate that which has, in the meantime, gone into public use."

Here we have the Gulick original application which, five years after the Long piston appeared on the market, was amended to embody, not only a "material addition" but indeed a material "variance from the original"; accordingly, such addition or variance cannot be sustained. That "webs laterally flexible" constitute something material cannot be disputed, because it was that feature which the Court of Appeals found characterized the alleged Gulick contribution to the art. That "webs laterally flexible" constitute a variance from "an extremely rigid connection" is so self-evident that there can be no question about it.

Powers-Kennedy Co. v. Concrete Co., 282 U. S. 175, involved a change in the specification of an application after filing under conditions closely analogous to the situation we have here. The McMichael patent in suit was for an apparatus for mixing and conveying materials, particularly concrete, in which an air pipe was shown for the purpose of agitating the concrete and preventing it from packing. The original application was filed January 14, 1907, and changes were made in the specification and new claims were added in 1911 and expanded in 1913, particularly by assigning to an air pipe the function of impelling movement of the concrete rather than agitation so as to inject what this Court called a "so-called slug theory" into the case. This change in front appeared under the following circumstances:

A certain Leake application was filed in the Patent Office about nine months after McMichael filed, and the McMichael and Leake applications were thrown into interference; the McMichael interest, however, purchased the Leake application with the result that both patents were

granted, the McMichael patent in 1915 and the Leake patent in 1917. This Court said (p. 185):

"And, even if the mode of operation is as claimed, it is to be remembered that Leake in his application of October 7, 1907, uses the same words to describe the operation of his nozzles as we find McMichael subsequently inserted in his specifications and claims. When this application came into interference with McMichael's, he, of course, became familiar with Leake's claims. It is significant that he then amended his claims, almost in the very words of Leake. This of itself destroys the patent. *Railway Co. v. Sayles*, 97 U. S. 554; *General Electric Co. v. Sangamo Electric Co.*, 174 Fed. 246; *Lopulco Systems, Inc. v. Bonnot Co.*, 24 F. (2d) 510."

Here, for nearly five years and while the Long flexible web pistons were on the market (for nearly three years with the knowledge of Gulick's then assignee) the Gulick application described the webs as being "extremely rigid." After Alumipum Company had lost the Hartog-Pomeroy interference based on claims and descriptions in a Hartog application filed February 16, 1920 (R. 1798), and after Gulick's then assignee had obtained knowledge of that interference (R. 1875), the Gulick application was assigned to the Trust Estate and on September 12, 1922, was amended to change the description of the webs from "extremely rigid" to "laterally flexible." This, as in the Powers-Kennedy case, was "almost in the very words" of Hartog and, of course, described the Long pistons which admittedly had webs laterally flexible (*Jeffries*, R. 938-9, 1006, 1003-10). The Powers-Kennedy case is directly in point and the principle of that decision renders the Gulick patent invalid.

The Change in the Gulick Application Was Not Permissible Under Permutit v. Graver Corp.

The Master considered *Permutit v. Graver*, 284 U. S. 52, and concluded (R. 1150-1):

"While the decisions of the Patent Office in the several piston cases were affirmed by Courts on appeal, such decisions now appear to have been founded upon a misconception of Revised Statute 4888, as were prior decisions of the Federal Courts which were overruled by the Supreme Court in the recent *Permutit Co. v. Graver Corp.*, 284 U. S. 52."

The District Court affirmed the Master. The Court of Appeals, however, completely ignoring the fact that this court's decision in *Permutit v. Graver* was subsequent to the decisions of the administrative courts approved the decisions of the administrative courts, despite the fact that the description of the web structure had been changed from "extremely rigid" to "laterally flexible." That, we contend, was directly contrary to *Permutit v. Graver*. It will be recalled that in that case this Court held that if the specifications did not describe an essential element, it could not be supplied by reference to the drawings, it being permissible to refer to the latter only "for illustration" or "as an aid in interpreting the specifications or claim."

While *Permutit v. Graver* was a case involving failure of the specification of an issued patent to describe an essential part of the alleged invention of the patent, the logical conclusion is that if a court may not read into a specification of an issued patent something shown only in the drawing, certainly the Commissioner of Patents cannot permit a specification to be amended on any such basis, especially where, as in this case, the changed description

is the very antithesis of what was originally described in the specification, particularly when it is made long after intervening rights have arisen: *Railway Company v. Sayles*, 97 U. S. 554, and *Powers-Kennedy Co. v. Concrete Co.*, 282 U. S. 175, cited under the preceding heading, were cases involving changes of the specification as filed, particularly against intervening rights.

R. S. 4888, 35 U. S. C. 33, makes no distinction between a patent as issued and an application as filed. It provides:

“Before any inventor or discoverer shall receive a patent for his invention or discovery, he shall * * * file in the Patent Office a written description of the same * * *.”

R. S. 4888 also requires that an inventor of a machine

“explain the principle thereof and the best mode in which he has contemplated applying that principle.”

There can be no doubt but that provision applies to the piston here involved. We have seen that in the *Powers-Kennedy* case this Court condemned the change in the specification as filed—from agitation of the concrete to impelling its movement—so as to introduce what this Court called a “so-called slug theory.” That, of course, involved a change introducing a different “principle.” Here the change in the original specification of the description of the web structure from “extremely rigid” to “laterally flexible” certainly involved a change introducing not only a different principle of operation but one which was the very antithesis of the principle of operation as well as of the essential structure originally described. Identically the same situation was involved in *Permutit v. Graver*. The Commissioner of patents should not have per-

mitted such an amendment in a pending application any more than a court should read such an amendment into an issued patent.

The situation here is substantially on all fours with the situation in *Permutit v. Graver*; indeed, the nature of the insufficiency is so closely analogous that the language in the *Permutit-Graver* case can readily be paraphrased. The case applies to the *Gulick* patent, because there was no description in the application as filed, nor in any original claim of "webs laterally flexible." The case also applies to the *Maynard* patent, hereafter more fully discussed, because neither in the *Maynard* application as filed, nor in the patent as issued, do we find any description, nor any claim, of "flexible webs in the region of the wrist-pin bosses."

In *Permutit v. Graver*, as here, the patent was contended to be for a certain structure having a certain novel characteristic feature. The patent was for a water softening apparatus which is described in the opinion of this court, 284 U. S., L. c. 55 and 56. Briefly stated, the apparatus comprised a container with water inlet and outlet connections and containing a charge of a water softening reagent (zeolite), the container having an open space above the zeolite to permit, as this court says (p. 56):

"the zeolite to rise or boil, and to spread out and reform in the bed,"

and to provide a "free" rather than a "locked" zeolite bed.

This court says (p. 56):

"First. The apparatus described in the specification closely resembles sand filters long used. The elements enumerated above, alone and in combination,

are confessedly old. The only invention seriously urged under Claim 1 is the substitution of a 'free' for a 'locked' zeolite bed—a matter which is not referred to either in the specification or in the claim."

As to the Gulick application, we can paraphrase the above language as follows: "the only invention" (urged by plaintiff and found by the Court of Appeals) resides in the substitution of "webs laterally flexible" (free) for "an extremely rigid connection" (locked). Here the situation is aggravated by the fact that while in *Permutit v. Graver* the specification was silent, in the original Gulick application the original description was just exactly the opposite from what it was when amended.

This court further says, page 57:

"There is no mention in the specification of either a 'free' or a 'locked' zeolite bed; or of the alleged discovery that a rising space above the zeolite bed is necessary for the successful operation of the softener."

In the original Gulick application there was no mention of any alleged discovery that "webs laterally flexible" were necessary for the successful operation of a piston, but rather than "an extremely rigid connection" was necessary.

This Court then discusses the decision of the Courts of Appeals in the cases involving that patent, which relied upon a showing in the drawing, as distinguished from a description, and this Court says, p. 59:

"The drawing annexed to the specification, it is true, shows a layer of sand or quartz at a point above the zeolites and an unoccupied space between it and the top of the zeolite bed,"

but this Court says, p. 60:

"Moreover, while drawings may be referred to for illustration and may be used as an aid in interpreting the specification or claim, they are of no avail where there is an entire absence of description of the alleged invention or a failure to claim it."

If drawings may be referred to only for illustration of what is described, then the web of the Gulick drawing could only be used as an aid to the original description, which was of "an extremely rigid connection"; it could not be used as an aid to the very opposite, namely, "laterally flexible." Furthermore, if drawings are of no avail where there is an entire absence of description, they surely cannot be an aid to something which is the very opposite of that originally described.

The Factual Basis for the Change in the Specifications and Upon Which the Decisions of the Patent Office and of the Administrative Courts Were Based Have Been Shown to Be Erroneous.

The Master, after considering *Permutit v. Graver*, found as follows (R. 1152):

"There were no metes and bounds fixed in the Gulick structure, and plaintiff must fail if inherent flexibility is relied upon, as was done in the Patent Office."

It will be seen by an examination of the opinions of the Patent Office tribunals and the administrative courts, that they found that the web shown in the drawings of the Gulick patent was inherently flexible. They thought that the change in the specifications was justified in view of this fact. The Circuit Court of Appeals relied upon those

decisions (R. 2385). The evidence in the case at bar, however, shows that inherent flexibility is not enough, but that, in order for a web to be latterly flexible so that the piston may properly function, it must be specifically designed to secure the desired result. This appears from the testimony of respondents' own witness, Dr. Jeffries. This fact demonstrates the correctness of the decision in Permutit v. Graver, supra, as it does also that the Circuit Court of Appeals erred in not holding that that decision was applicable to and governs the case at bar.

When Dr. Jeffries was cross-examined about the expression "an extremely rigid connection," as found in the original application, he not only admitted that it had reference to the web 18 (R. 150), but he specifically says:

"It would have to be in the connection between the boss portion and the skirt portion. But then so far as rigidity is concerned, that is of course incompatible with flexibility. He does have a rigid piston longitudinally, and a flexible piston laterally."

Finally, Dr. Jeffries had to admit that the sole descriptive basis for "webs laterally flexible," as found in the Gulick patent as issued, is found in the part added by amendment (R. 173).^{*} Since, therefore, the description

^{*}"Q. Now, you don't find any description in the Gulick patent as to definite proportioning of thickness of web to secure flexibility, do you? A. Yes.

Q. You mean a specific statement to that effect, that the web is proportioned to secure flexibility? A. Well, I will find what I had in mind on that point. (After examining patent.) Beginning line 17, page 2, 'The arrangement of the supporting flanges 17 between the ends of the piston pin bosses and the connections of those flanges with both the piston guide portion and the head provide a particularly strong construction and at the same time, when the longitudinal split is used, as shown, the web structure has sufficient

was only in the amendment, Respondent had to rely solely on the drawing. As to what the drawings tell him, Dr. Jeffries testifies as follows:

“Q. Well, I am asking now about the drawings. You can read drawings, and to your mind they give you a complete picture, don't they?

A. Fairly complete, yes.

Q. And those drawings, with the simple statement that the piston is made to take care of expansion, that would be enough to give you the idea that the webs should be properly proportioned to flex?

A. I think so.

Q. Due to the inherent structure?

A. Yes” (R. 158).

In other words, “inherent structure” of something shown in the drawings was again relied on here, as in the Patent Office and before the administrative courts. Let us now see what Dr. Jeffries further said about that, particularly on Cross-Examination.

Dr. Jeffries testified as follows:

1. That inherent flexibility of any given structure

lateral flexibility to permit the split to close more or less under the action of the expansion forces incident to the heating of the piston.”

Q. You think that is full and complete? A. Yes, that is a complete statement as to the function and mode of operation of those webs.

Q. Particularly from lines 24 to 27, isn't that right? A. Yes, when the longitudinal split is used; that is, from lines 23 to 27.

Mr. Bruninga: Well, just as part of the defense, in order to connect it up, I want to say that we will show that that was added by amendment” (R. 173).

to produce that result cannot be relied upon.* ††

2. That lateral flexibility is established not merely by the presence of a vertical split, but because of the design of the webs to produce flexibility.*

3. That there must be a correct proportioning of the different parts as related to location and thickness in order to produce the desired result.*

Dr. Jeffries also sets out the following limitations: that flexing is not only a matter of size, but is also a matter of construction (R. 155); that the web thickness is a complicated thing and depends upon the functions required to be performed (R. 152); that the desirability for lateral flexibility determines the thickness of the webs (R. 148); that the webs can be made too flexible for proper functioning (R. 149 and 263); that there is a maximum web thickness for proper functioning (R. 155); that the webs can be made so as not to flex enough, and to flex too much for proper functioning (R. 156); that web flexibility is not merely a function of the web thickness, but is also a function of web height (R. 156), and is also a function of the web length (R. 1050); that in 1917 (when the Gulick appli-

*"Q. And flexible because there is a split between the webs?
A. Flexible because of the split and because of the design of the webs to produce flexibility.

Q. In other words, there must be deliberate design of the web to produce flexibility? A. I don't know that there must be deliberate design to produce flexibility, if the design is capable of doing that, but there certainly must be a correct proportioning of the different parts as to location and thickness in order to produce the desired results.

Q. You cannot rely upon the inherent flexibility of any given structure, then, to produce that result, can you? A. No, I think not" (R. 269).

††"Q. You wouldn't say, then, that the inherent flexibility of any structure having cross webs is then sufficient to permit a skirt to

cation was filed) the design of the structure to get the right web flexure was "quite a task" (R. 157).

Indeed, Dr. Jeffries says (R. 149):

"Oh, I think the whole thing has to be designed with the object of gaining the mode of operation and results contemplated."

And further (R. 227-28):

"Q. And if you split almost any Ricardo slipper vertically, no matter what the thickness is, that is the thickness that is ordinarily used in the Ricardo piston at that time, you would have enough inherent flexibility there to be operative in an engine; isn't that right?

A. Yes, I think that is not a fair conclusion. That is, there first had to be the idea of making a piston of that construction operate satisfactorily, that idea utilizing the flexibility due to co-operation of the horizontal and vertical slots; and then there had to be the matter of proportioning the various parts so that that flexibility would be proper to properly operate in the motor."

The above testimony of Respondent's own expert, Dr. Jeffries, should be sufficient to show that in this case drawings alone are not sufficient, absent description, even if they do happen to show a construction which, if followed as to dimensions, will produce a flexible web structure.

contract circumferentially in order to compensate for expansion? A. No, I would not. This contraction is not a circumferential contraction in the sense that the entire circumference is contracted. It is a reduction of diameter by the closing of this lot, by the general cantilever principle" (R. 156).

Point II

THE CIRCUIT COURT OF APPEALS UPON RESPONDENT'S CONTENTION TREATED "FLEXIBLE WEBS IN THE REGIONS OF THE WRIST PIN BOSSES" AS ESSENTIAL ELEMENTS CHARACTERIZING THE PISTON OF THE MAYNARD PATENT, PRESUMABLY RELYING UPON AN INTERPRETATION OF THE DRAWING, NOTWITHSTANDING THAT THE SPECIFICATIONS ARE SILENT WITH REFERENCE TO WEB FLEXIBILITY; ITS DECISION IS THUS CONTRARY TO PERMUTT V. GRAVER, 284 U. S. 52.

The patent (see drawing in Appendix) describes a piston comprising a head A and a skirt D whose sides are dashed in to provide what the patent calls "webs F" connected to the head and carrying wrist pin bosses G. Grooves or slots E extend part-circumferentially around the piston between the head and the skirt, and a split I on one side of the skirt forms with one of the circumferential grooves a T-slot. Recesses H are formed between bottom-arcuate skirt portions and the so-called webs F.

Here we again have a piston which is essentially rigid in the regions of the wrist pin bosses. The so-called webs are tied to the head at the top, while at the bottom we have an arc and a chord—an essentially rigid construction. There is not a word in either the application as filed or in the patent as issued about "flexible webs in the regions of the wrist pin bosses." The Master found (R. 1162) "Any reference to flexing of the skirt is omitted from the Maynard patent." The patent does not even say whether the piston is to be of aluminum, iron or steel.

The Court of Appeals said as to this patent (R. 2392):

"Maynard upon a patent application filed January 3, 1921, embodies the Gulick combination of skirt insulation, skirt flexibility by means of vertical slotting co-operating with longitudinal slotting, and flexible webs in the region of the wrist pin bosses."

"He also follows Jardine's simplified design to permit economical manufacture and Jardine's boss relief."

Here again the Court of Appeals' opinion was not based upon any statement in the specifications, but on the interpretation of the drawings by Respondent's expert, Dr. Jeffries. The pertinent parts of his testimony are as follows:

"And one of the features of the Maynard piston is flexibility, and the flexibility of the skirt portion and the webs co-operate to produce the Maynard effect" (R. 122).

"Q. And that would not happen in Maynard?

A. That would happen in Maynard to an extent, but Maynard has flexibility.

Q. Flexibility between the wrist pin bosses and the skirt section?

A. Yes, and also some web flexibility at the top of the skirt.

Q. Some web flexibility at the top of the skirt?

A. Yes.

Q. More web flexibility than Mr. Ricardo?

A. Well, Ricardo has no web flexibility, because he has no place for the web to flex. He has the rigid, nonflexible structure, whereas Maynard has a flexing structure.

Q. Even a flexing structure at the top of the web?

A. Yes" (R. 261).

Dr. Jeffries really admitted that the Maynard patent specification does not describe the webs as even designed to flex (R. 1037):

"Q. But can't you answer my question when I ask you, do you want the Court to understand that in the operation of the piston the part about $\frac{1}{8}$ of an inch long flexes?

A. Yes, I think it does. I think I have said that a good many times. I think I have got very good grounds for saying it, although I don't know that that itself makes a whole lot of difference, because Maynard doesn't necessarily say that that particular part has got to flex; he gives a construction which operates in a motor and the construction is similar to that construction of Exhibit 1."

It is interesting to note that Dr. Jeffries' position as to Exhibit 1, decided by the Court of Appeals to infringe the Maynard patent, was that the web "is flexible because the web is made thin" (R. 1036), although as previously shown by Dr. Jeffries a piston web in order to flex properly must be designed and proportioned so as to be neither too thin nor too thick, nor too long nor too short, nor too wide nor too narrow. Indeed, Dr. Jeffries admitted that even in a piston like Exhibit 1 the web structure, if too thick, will cause the piston "to score or to rub" (R. 1043).

Here, then, we have a situation where the Court of Appeals found an essential element, distinguishing the Maynard patent, to reside in "flexible webs in the region of the wrist pin bosses," although there is not a word about such flexible webs in even the patent as issued. That is, of course, directly contrary to the decision of this Court in *Permutit Co. v. Graver Corp.*, 284 U. S. 52. Moreover, here again we have the same situation as we had in the

Gulick application, namely, that a piston in order to function by virtue of web flex, must have that web designed to flex, and must be proportioned to so flex, so that again any factual basis is lacking.

Point III.

THE CIRCUIT COURT OF APPEALS WAS NOT JUSTIFIED IN FINDING THAT THE ALUMINUM PISTON PROBLEM WAS SOLVED BY EITHER THE GULICK OR MAYNARD PATENTS OR THAT THE COMMERCIAL SUCCESS WHICH HAS ATTENDED THE ALUMINUM PISTON WAS DUE TO EITHER OF THOSE PATENTS; AND IT ERRED IN OVERRULING THE MASTER AND DISTRICT JUDGE IN THESE RESPECTS.

This Court, in *Adamsen v. Gilliland*, 242 U. S. 350, 353, quoted with approval from its prior decision in *Davis v. Schwartz*, 155 U. S. 631, 636, as follows:

"so far as the finding of the master or judge who saw the witnesses 'depends upon conflicting testimony or upon the credibility of witnesses, or so far as there is any testimony consistent with the finding, it must be treated as unavailable.'"

This rule was recently reiterated by this Court in *Alabama Power Co. v. Ickes*, 302 U. S. 464. See, also, Rule 52 of the new Rules of Civil Procedure. In the case at bar the facts were found specially by the Master and adopted by the district judge. There was ample testimony, consistent with the finding of the Master and district judge, and, as we will now demonstrate, the latter finding was not only not clearly erroneous but was eminently correct.

The reference was upon the motion of and at the insistence of Respondent (R. 43) over Petitioner's objections (R. 44); and the order directed the Master "to observe such tests as the parties may perform or cause to be performed" and to "rule upon the admissibility of evidence, and to report his conclusions of law and findings of fact" (R. 44). The Master did so. After the trial, briefs and arguments, he transmitted to counsel copies of his Draft Report and invited suggestions to the end that error might be corrected (R. 1274). Respondent's counsel acknowledged receipt of the Draft Report but specifically declined to offer suggestions or corrections (R. 1274-5).

The Court of Appeals' decision, after stating Respondent's contention that "the aluminum piston problem was completely solved by some of its assignors," enumerating Gulick, Jardine and Maynard (R. 2383), states:

"Limited success may here and there have been attained, but the problem in its full sweep was not solved until the Gulick concept, carried forward to some extent by Maynard, with possibly some instruction from Jardine, reached commercial embodiment. Then, and then only, did the industry by acceptance of the Aluminum Company's piston answering the Maynard drawing and specification, recognize the complete solution of the problem, and the many millions that have since been sold and used have set the seal of commercial approval upon such solution." (R. 2387-88):

"That the Maynard piston had a very great effect upon the industry and substantially advanced the art, there can be no doubt upon this record. In the precise form disclosed by Maynard and depicted in his drawings, many thousands were made and successfully used. In a somewhat modified form its produc-

tion and use has run into very many millions" (R. 2393).

The respondent's claim of commercial success was presented squarely to the Master, who ruled with reference thereto as follows:

"The situation here is peculiar, for the structures of none of the pistons in suit have ever gone into commercial use. That of Schmiedeknecht, Mooers, Gulick and Jardine not at all, while as to the Maynard design, the proof is that it was not used successfully until it had been provided with ~~the~~ **Keystone relief**. Particularly as to the Maynard piston it was discarded by Chrysler, an unwilling party plaintiff which has the right to its use as a half-owner of the patent" (R. 1182).

"Nowhere in the patent (Maynard) is there any statement about **Keystone relief**, found necessary to make function commercial pistons like Exhibits 1 and 17" (R. 1162).

"While two rough castings were produced without the **Keystone relief**, the record shows that after the filing of the Maynard patent application, change was made to give the **Keystone relief** (Ex. 22)" (R. 1162-3).

There was ample testimony consistent with the findings of the Master affirmed by the District Court, while the findings of the Court of Appeals are not consistent with the evidence, and are erroneous. This we will now demonstrate.

No Gulick or Maynard Pistons Went Into Commercial Use. This was admitted by respondent's witness Jeffries as to the Gulick patent (R. 146). As to the Maynard patent, it admittedly contains no description of the **Keystone relief**

(R. 130), and even the drawing does not disclose it (R. 225). It will be recalled that the Keystone relief is used in the accused Exhibit 1, and, as the Master found, permits automatic compensation for expansion in that piston (R. 1105; Finding 48). The Maynard patent does not, therefore, either describe or illustrate Exhibit 1 with its essential Keystone relief.

The finding of the Court of Appeals that "in the precise form disclosed by Maynard and depicted in his drawings, many thousands were made and successfully used" (R. 2393), was based upon the statement of respondent's witness Jeffries on direct examination (R. 78), which statement, upon cross-examination, was shown based on hearsay, for Jeffries admitted that he never installed or even saw such a piston, but saw only drawings (R. 1045); he did not even know whether any such piston ran for one hundred miles (R. 1046). Further, on cross-examination, Jeffries only produced unfinished castings (Exs. 3-M and 3-N), which admittedly did not have that Keystone relief (R. 135). On redirect examination (R. 189) he produced drawings (Exs. 21 and 22, R. 1337-40). Of these only Exhibit 22 shows the Keystone relief, but it also shows by "their wire" (evidently Oakland's) that the Keystone relief was "added" February 10, 1925, over four years after the filing of the Maynard application.

The Maynard Patent Did Not Advance the Art. If we take the piston shown in the Maynard patent, but without the Keystone relief or webs laterally flexible, neither of which is disclosed therein, then as to its fundamental structure, as stated by the Master (R. 1163):

"The Franquist piston is a complete answer to the Maynard piston, for it shows the structure, function and mode of operation of the Maynard patent."

And as found by the Master (R. 1099):

(21) "The Maynard patent embodies the fundamental structure of the Franquist patent No. 1,153,902, and that the splitting of the skirt by through and through slotting was within the purview of one skilled in the art."

The Court of Appeals agreed with the Master that

"Franquist, of course, does disclose the broad concept of a flexible skirt" (R. 2386).

In the Franquist patent (R. 1688), see drawing in appendix, the head 2 of the piston is separated from the skirt by quarter circumferential slots 17 in the regions of the bearing or thrust faces 15 and the skirt is also depressed or relieved in the regions 14 of the wrist pin bosses 6. The skirt is also slotted vertically at 13 to compensate for expansion, although the slots do not go all the way through the skirt. However, the Court of Appeals agreed with the above-quoted finding of the Master that the following was also old:

"splitting the piston skirt vertically or combining the vertical and longitudinal splits into the so-called T-slot" (R. 2386).

The Master, therefore, properly found (R. 1163):

"that all Maynard did was to put the T-slot of Long on the piston of Schmiedeknecht."

Of course, that is all Maynard really did. The Long piston is illustrated in the Appendix in connection with the pistons of the Franquist, Schmiedeknecht and Maynard patents. Long followed the concept of Franquist in partially severing the skirt from the head by part circumfer-

ential slots. Long then provided a vertical slot which with one of the circumferential slots formed the T-slot. Maynard simply took the T-slot of Long and placed it on the Schmiedeknecht piston in the same place that Long had done. The Schmiedeknecht piston is the prototype of the Maynard piston. Indeed, it was so considered by Respondent, who not only issued licenses and collected royalties thereunder, but brought suit against and secured a decree against Sterling's customer (Simmons) by reason of Simmons selling a piston like Exhibit 1 (R. 101).

Exhibit 1 Cannot Be Relied Upon as Establishing Commercial Use by Galick and Maynard. The Master described this piston (R. 1116) as

"a stiff piston, being a truss construction with a chord spanning an arc, and when this piston scored, resort was had to what is now known as the 'Keystone relief.'"

The Master specifically found (R. 1105):

(48) "That in Ex. 1 automatic compensation is accomplished by what has been termed the 'Keystone relief' and not by any web flexibility at the top; that the circumferential slotting terminates at about the inside of the head flange and that such a construction and arrangement does not secure the operation contemplated by the Galick, Jardine and Maynard patents."

This finding was not only based on tests which the Master stated he had witnessed (R. 1092) in accordance with the Order of Reference (R. 44), as well as upon demonstrations to which he refers (R. 1122), but the above finding was based upon the testimony of Respondent's

own witness, Dr. Jeffries, who, in stating the metes and bounds of the Jardine patent piston (said by the Court of Appeals to be incorporated in the Maynard piston and to follow the Gulick patent) (R. 2392), as follows:

"Q. Would you say that the objects and advantages and purposes of the Jardine patent are secured if the slots 29 were shortened to terminate about the inside part of the ring flange 23?

A. It would be quite difficult to secure successful operation under those conditions" (R. 230-1). (See drawing R. 1294.)

That is exactly what we have in Exhibit 1, namely, the slot going into the web terminates about the inside part of the ring flange. That should dispose of this case, for the Master's finding is not only supported by the evidence, to say nothing of reason and common sense, but is affirmed by the testimony of plaintiff's own expert, Jeffries.

The Master further found (R. 1105):

(51) "That defendants' pistons, Ex. 1, employs the essential structure, function and mode of operation of the prior art, more particularly the Franquist patent No. 1,153,902."

The Master made the above finding after witnessing tests of the Franquist piston as stated by him (R. 1122). See also R. 1041-2. Stellmann, former Chief Engineer of the Franklin Automobile Company, also explained the operation of Exhibit 1 as related to the Franquist piston, and that they are the same (R. 526). That was really admitted by Dr. Jeffries (R. 128).

It is axiomatic, of course, that an accused device (Ex. 1) cannot infringe an unexpired patent (Gulick or May-

nard) when it has the essential structure, function and mode of operation of an expired patent (Franquist), even when that expired patent is supplemented by something (Keystone relief) not disclosed in that unexpired patent, and which gives a distinctly different mode of operation. It is self-evident, therefore, that Exhibit 1 cannot be relied upon as establishing commercial success of Gulick and Maynard.

The Long Pistons Were in Commercial Use From 1917 On. The statements of the Court of Appeals that there was only "limited success here and there" prior to the advent of the Maynard piston and that "then and then only did the industry . . . recognize the complete solution of the problem" (R. 2387-88) are not based upon the evidence, but the contrary is true.

The Maynard piston, according to Dr. Jeffries, did not appear on the market until 1923 (R. 69). But as we have shown in the Statement of the Case and as found by the Master (Finding 37, R. 1102-3), the Long pistons (see cut in Appendix) were developed as early as 1916, were sold in the replacement trade from 1917 on, were adopted by Franklin Automobile Company in April, 1920, and for standard equipment in November, 1920, and such use continued by Franklin until 1926. Indeed, we showed that Respondent's own witness admitted such use by Franklin as early as 1920. We further showed that the Long piston was replaced at Franklin in 1926, not by a Maynard piston, but by the steel strut piston, after the Trust had sued Long on the broad Spillman and Mooers patent, and after the Trust came into full potence.

**Commercial Success Cannot Be Here Based Upon
Licenses Under a Patent Pool.**

Since no commercial use was shown by a piston of either of the Gulick or Maynard patents, the sole basis of commercial success of these patents must, therefore, be based upon the acceptance of licenses from, and the payment of royalties to, the title holder of a pool of eighty odd patents. But the nature of these patents, the circumstances of their pooling and the relations of the licensees cannot form such a basis in this case. Respondent attempted to do so by an impressive showing of the amounts of royalties which had been paid into the Trust (Ex. 13, R. 1328) and then proclaimed that the Gulick and Maynard patents, that is, two of the eighty odd patents, were responsible for it all. Petitioners, therefore, by compelling the production of the licenses and evidence relating to the formation of the pool and its operation showed the circumstances previously set out in the Statement of the Case and which may be summarized as follows:

Perfection in 1924 of a pool of patents by Cleveland Trust Company and Aluminum Company of America; with the Trust Estate holding and acquiring (nominally) all piston structure patents, including the basic Spillman and Mooers, and Franquist patents, as well as the Gulick and Maynard patents and later the Schmiedeknecht patent (the prototype of the Maynard patent piston); with Aluminum Company holding and reserving for itself the basic patents on processes and molds for chill-casting aluminum pistons and even for the chill-cast aluminum pistons per se; with an exclusive license from the Trust Estate to Aluminum Company for aluminum pistons and with concurrent sublicenses and licenses by Aluminum Company, under the Trust-held patents and the Aluminum Company

patents, to a limited number of piston manufacturers; with concurrent acknowledgment of a totally different piston (controlled type-strut, Ex. AAA) as coming under the Trust-held patents; with suits even in 1923 by the Trust and Aluminum Company against Long and another piston manufacturer; and the final elimination of Long as a competitor in 1926.

As the Master said (R. 1183):

“The plan of plaintiff and its licensees has been to control the market in the manufacture of aluminum pistons, and former competitors Bohn Aluminum & Brass and Kant-Skore became sub and collateral licensees.”

Actually at the end of 1926 there was complete control of the aluminum piston business in Aluminum Company of America with its ownership of its own chill-cast piston molding patents and with its exclusive license to aluminum pistons under the Trust-held patents. This was the situation even before the issue of the Gulick and Maynard patents, for the then issued patents of the Trust, particularly the Franquist patent, pre-empted the piston structure field, while the patents of Aluminum Company pre-empted the piston casting field. These latter, according to Dr. Jeffries, really solved the aluminum piston problem (R. 91, 100, 144). The Franquist patent did not expire until 1932 and the Aluminum Company patents did not expire until 1936. Even the Schmiedeknecht patent, which is really the prototype of the Maynard piston, did not expire until 1935.

From the above, it will be apparent that not only were the various licensees and sublicensees bound together by at least two-field ties, but there was nothing to show that

commercial success can be attributed to any two particular patents of the Trust, namely, the Gulick and Maynard patents, neither of which went into commercial use, and that no effect can be given to the licenses taken by these bound-together licensees under the Gulick and Maynard patents. The Master applied the proper rule when he said (R. 1184):

“Until their expiration, plaintiff could rely upon the Spillman & Mooers and Franquist patents, and that piston manufacturers did not contest is no criterion of validity, for even the value and general use of a device will not sustain a patent if the lack of invention is clear. Of a situation not unlike that presented here, with the trustee owning many piston patents, Mr. Justice Holmes of the Supreme Court, in the recent *Mineral Separation v. Magma Copper*, 280 U. S. 400 (1930), says at page 404:

“The petitioner adverts to the success that has attended the later patent and to the fact that the world waited until it appeared. But interlopers naturally would be slow to venture into the field occupied by a powerful company armed with Patent No. 835,120 and supported by a subtle ingenuity that we cannot doubt would have been exercised with even more effect to show that a process like that in No. 962,078 was an infringement than it now is to prove that the latter patent was a revelation that transformed the art.”

The sum and substance of the evidence offered in connection with alleged commercial success was that the only recognition that had been given to the Maynard and Gulick patents was either of the “strong hands” type, *Mineral Separation v. Magma Copper*, *supra*, and *Textile Machine Works v. Louis Hirsch Textile Machines*, 301

U. S. 680, 57 Sup. Ct. 944, or of the "selfish" type discussed by Judge Tuttle in Oxford Varnish Corporation v. General Motors, 23 F. Sup. 562.

But respondent has in the courts below attempted to escape the effect of these decisions by contending that the inventions of the Spillman & Mooers and Franquist patents—after they had expired—were of no commercial utility, even to the extent of saying that the Franquist piston was, "probably worse than a trunk piston" (R. 247) and "just plain no good" (R. 1043). However, this contention can be given little, if any, effect, in view of the fact, as pointed out in the Statement of the Case, that respondent, prior to the expiration of these patents, represented that they were responsible for the success of aluminum pistons, issued licenses thereon, collected royalties, brought suits, recovered judgments and, even as late as 1933, sought to have the decree in a suit in which they had recovered a judgment expanded so as to cover a piston identical with Exhibit 1. The Master discussed the evidence and the authorities (R. 1120-24) and properly came to the conclusion that respondent's attempt to renounce and denounce the Franquist patent could not be accepted, and that Exhibit 1 was based upon the now expired Franquist patent as respondent had previously contended and not on the Gulick and Maynard patents.

There has been no commercial success of anything described by Gulick or Maynard but of something discovered by Franquist in 1915, who, as stated by the Master (R. 1119), first disclosed "the conditions, fundamental means to meet those conditions, operation and results" of a practical piston, and whose disclosure has been followed by Exhibit 1. Upon expiration of that patent in 1932, that piston became free to the public to use. Even

in the specific form of Exhibit 1, it certainly became free in 1935, when the Schmiedeknecht patent expired. As will be seen from the last page of the Appendix, Exhibit 1 is simply the piston illustrated in the expired Schmiedeknecht patent, provided with the T-slot of Long, following the disclosure of Franquist, and having a Keystone relief not disclosed in either the Gulick or Maynard patents. Respondent could not by a device of pooling patents, first make use of, and after expiration of successive patents of the pool renounce them successively and transfer the claim of commercial success to later patents of the pool.

Point IV.

THE CIRCUIT COURT OF APPEALS WAS NOT JUSTIFIED IN CONCLUDING THAT THE PRESUMPTION RAISED BY THE DECISIONS IN THE INTERFERENCES INVOLVING THE APPLICATION OF THE GULICK PATENT HAD NOT BEEN OVERCOME BY CLEAR AND COGENT EVIDENCE, AND IT ERRED IN OVERRULING THE MASTER AND THE DISTRICT JUDGE IN THESE RESPECTS.

The Circuit Court of Appeals considered that because of the interferences in which the application of the Gulick patent had been involved, that it "should not be stricken down except upon very clear and convincing proof of invalidity" (R. 2388). It relied upon what this Court said in *Radio Corp. v. Radio Engr. Lab.*, 293 U. S. 1, 2. In that case this Court was dealing with a patent which had issued after a protracted interference contest in the Patent Office and the Courts. This Court there said that such a patent had a presumption of validity "not to be overthrown except by clear and cogent evidence" (293 U. S. 2).

The District Court (R. 1229) considered that decision but decided that the presumption had been overcome. The Master refused to follow the decisions of the administrative tribunals approving the radical amendments made in the Gulick application because: first, the legal basis upon which these decisions were predicated was not sufficient in view of this Court's decisions in *Permutit v. Graver*, 283 U. S. 524; *Powers-Kennedy v. Concrete*, 282 U. S. 175; second, because the factual basis of those decisions had been dissipated by the evidence in these causes, particularly by the testimony of respondents' own witness, Dr. Jeffries.

The Court of Appeals simply agreed with and followed the decisions of those administrative tribunals (R. 2391) and in doing so went directly contrary to the decisions of this court.

The evidence in this cause is "clear and cogent" and the Court of Appeals, therefore, erred in overruling the Master and the District Judge. That evidence has been considered under Point I and need, therefore, not be further considered.

Moreover, the evidence is uncontradicted that in the Gulick application, as filed, there was no reference to laterally flexible webs, and the justification for reading them into the case relied upon by the Patent Office tribunals, the administrative courts, and the Circuit Court of Appeals was that this feature was found inherently from the drawings. The amendments which the Patent Office permitted to be made in this respect to the Gulick application were inserted long after intervening rights had arisen. The question presented, therefore, was whether a laterally flexible web which was considered by all of the courts and the Patent Office tribunals to be an essential element of

the patent could legally be considered as a part of the invention disclosed and claimed. This was a question of law to which, as we have previously endeavored to demonstrate, the decisions of this Court in *Permutit v. Graver*, *supra*, and *Powers-Kennedy v. Concrete*, *supra*, required a negative answer. The question was not whether invalidity was shown "by clear and cogent evidence," but whether, as a matter of law, a patent is valid which does not disclose, describe or discuss in its specification an element found to be essential.

CONCLUSION.

For the reasons stated, we urge that the Gulick and Maynard patents here in suit should be held invalid and that the decision of the Circuit Court of Appeals for the Sixth Circuit should be reversed.

Respectfully submitted,

THOMAS G. HAIGHT,
JOHN H. BRUNINGA,
JOHN H. SUTHERLAND,

Attorneys for Petitioners.

September 17, 1938.

APPENDIX

Composite of Galick Specification as Filed and as Amended.

(Cancellations shown by crossing out; additions by
bold-face type.)

To Whom It May Concern:

Be it known that I, Edward J. Galick, a citizen of the United States, and resident of Elkhart, Elkhart County, State of Indiana, have invented certain new and useful improvements in ~~Hydrocarbon-Motors~~ **Pistons** of which the following is a specification:

1.

This invention relates to ~~hydrocarbon-motors and par-~~
~~ticularly to pistons therefor.~~

One of the objects of the present invention is to provide a piston which ~~is will not adapted to expand against~~
the cylinder wall to such an extent as to ~~seize same or stick.~~

Another object of the invention is to provide a piston with a skirt or guide portion slightly separated from the head of the piston and split longitudinally so that it will not expand in circumference with a force great enough to cause the piston to stick in the cylinder.

Another object of the invention is to provide a piston with improved lubricating means for lubricating ~~condens-~~
~~leading from the exterior of the piston to the piston pin~~
~~bones.~~

Another object of the invention is to rigidly support the piston pin bones of a piston from the piston walls against

mechanical load thrust from the connecting rod without interfering with the yielding characteristics of the skirt in response to cylinder wall pressure.

Other objects of the invention will appear from the following description taken in connection with the drawings which form a part of this specification, and in which:

Fig. 1 is a longitudinal sectional view through a piston embodying the invention;

Fig. 2 is similar to Fig. 1 taken at right angles thereto, being on the line 2-2 of Fig. 3;

Fig. 3 is a transverse section substantially on the line 3-3 of Fig. 1;

Fig. 4 is a transverse section on the line 4-4 of Fig. 1;

2.

Fig. 5 is a view similar to Fig. 1, showing a slightly different form of piston embodying the invention; and

Fig. 6 is a top view of the piston shown in Fig. 5.

Referring to the drawings, 10 represents the head portion of a piston and 11 is the skirt or guide portion which is shown as separated at its periphery from the head leaving an annular slit or opening 12 therebetween. The head portion of the piston is provided with an annular groove 13 for a piston ring 14, and the upper end of the skirt portion 11 is formed with a recess shown in the form of an annular groove 15 for the purpose of collecting the oil that may be scraped from the cylinder during the reciprocation of the piston.

The piston is also provided with a pair of separated piston pin bosses 16 which are formed with integral supporting flanges 17 extending around the bosses and ar-

ranged intermediate their ends. These flanges extend laterally of their respective bosses in the form of webs 18 which integrally connect with the wall of the skirt guide portion 11 as shown in the drawings. Since there are two of these webs or walls 18 for each of the bosses 16 there are therefore four connections of the webs 18 to the skirt or guide portion 11. These connections are in the four longitudinal lines as shown at 19.

The flanges 17 also extend upwardly from the bosses in the form of webs or walls 20 leading to the head 10 and thereby connecting the bosses with the head. Thus, the bosses are connected to both the head and the skirt so that the latter is held in its proper position directly beneath the head as shown in Figs. 1 and 2.

In order that the skirt may not expand an undue amount when the piston is heated, as under operating

3.

conditions, the cylinder-engaging part of the guide at one side of the pin bosses which takes the angular thrust of the connecting rod during one stroke of the piston is split longitudinally as at 21. This split is slightly diagonal to prevent wearing a groove in the cylinder and it effects a complete severing of the guide wall so that the separated edges of the split are unrestrained for movement toward and from each other.

The piston is further provided with conduits 22 shown in the form of pipes extending from the recess or groove 15 at the upper end of the skirt to openings 23 in the bosses. There is shown one conduit for each boss and it will be understood that the oil collected in the groove 15 by the piston in its reciprocation is led down through the

conduits 22 to the interior of the piston pin bores to thereby lubricate the bearing.

The skirt 11 is formed with openings 24 in its side registering with the openings through the bosses 16 so that the piston pin may be inserted. As these openings are well above the bottom of the guide portion of the piston the lower end of the piston skirt is left unbroken, except for the split 21, and the arcuate parts of the skirt beneath said openings may be looked upon as joining the lower ends of the diametrically opposite cylinder-engaging parts of the guide that sustain the angular thrust of the connecting rod.

It will be seen that in addition to providing a piston with a split-skirt guide portion the above described construction also provides an extremely a longitudinally rigid connection between the piston pin bosses and the skirt guide portion of the piston, which construction may be used either with or without the split skirt guide portion and separated head. The arrangement of the supporting flanges 17 between the ends of the piston pin bosses and the connections of these flanges with both the piston-skirt guide portion and the head provide a particularly strong support for the lower construction, and at the same time, when the longitudinal split is used, as shown, the web structure has sufficient lateral flexibility to permit the split to close more or less under the action of the expansion forces incident to the heating of the piston.

In Figs. 5 and 6 the webs or walls 18 are slightly curved between the flanges 17 and the skirt-wall guide portion to thereby distribute the connection of the bosses to the skirt guide portion more evenly around the skirt piston. Otherwise the showing is substantially the same as in the other figures. While my piston is, of course, adapted for

use in either vertical, inclined, or horizontal engines, for convenience I refer in some instances to its head end and its open end as the upper and lower ends or parts, respectively.

It will be understood further that my invention is not limited to the details of construction shown and other forms may be used without departing from the spirit or scope of the invention.

DRAWING OF GULICK PATENT.

July 21, 1931.

E. J. GULICK

1,815,733

PISTON

Filed Nov. 30, 1917

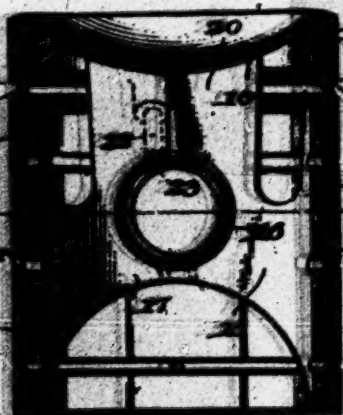


Fig. 1.

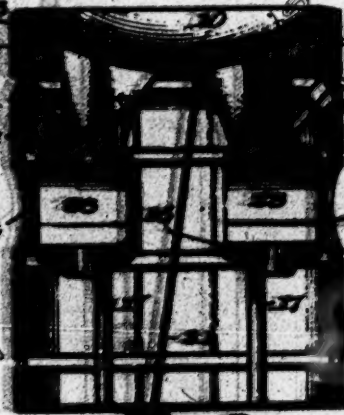


Fig. 2.

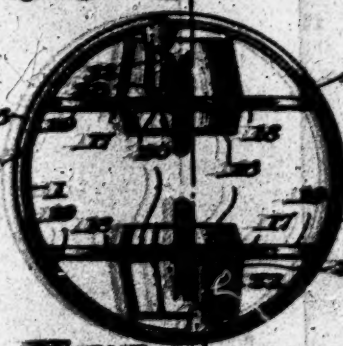


Fig. 3.

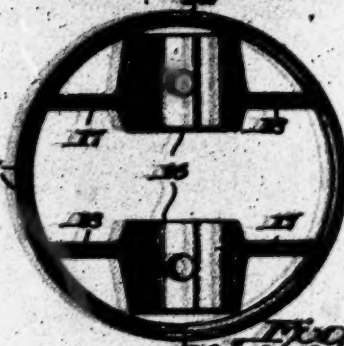


Fig. 4.

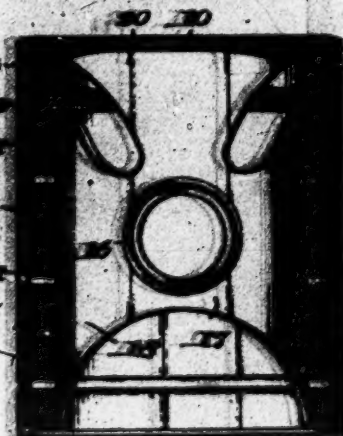


Fig. 5.

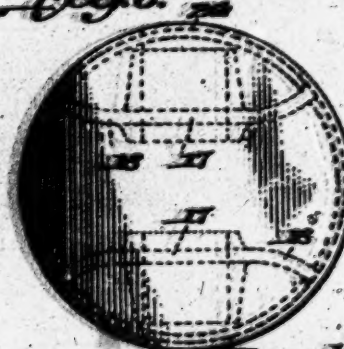


Fig. 6.

Inventor:
By Edward J. Gulick,
William J. Felt, atty.

ILLUSTRATIONS OF PISTONS.

Exhibit 1
1923



Keystone
Relief.

Franquist
1914



Relief—24

Base—5

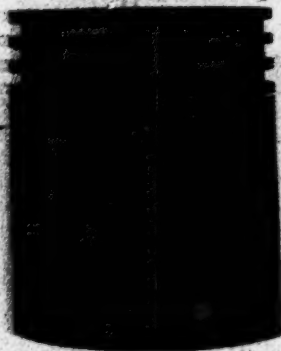
Slot—25

Slot

Thrust
Face

Slot

Long
1917-1926

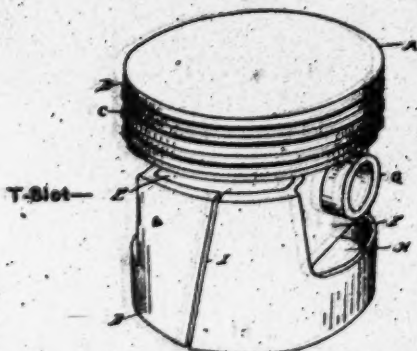


T-Slot

Schmiedeknecht
1917



Maynard
1921



T-Slot